

**Notice of Allowability**

Application No.

09/634,243

Applicant(s)

KAWAHARA ET AL.

Examiner

Virginia M Kibler

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**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 12/13/04.
2. ☒ The allowed claim(s) is/are 1-12, 14-17, 19-30 (renumbered 1-28).
3. ☒ The drawings filed on 08 August 2000 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☒ None    of the:
  1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |  |  |
|--|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892)   | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____. |
| 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date <u>11152004</u> | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment                    |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material                               | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance   |
|  | 9. <input type="checkbox"/> Other _____.   |

### EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Franco De Liguori (Reg. No. 36,497) on 1/5/05.

The application has been amended as follows:

In the claims:

1. (currently amended) A fingerprint reading device comprising:  
an active matrix liquid crystal cell having a front surface ~~facing a user~~ and a rear surface opposing the front surface;  
an illumination source for projecting a light from the rear surface to the front surface of the active matrix liquid crystal cell;  
a flat light guiding plate ~~having parallel opposed main surfaces disposed~~ on the front surface of the active matrix liquid crystal cell for transmitting the light projected ~~from the rear surface of~~ through the active matrix liquid crystal cell ~~and deflecting to a person's finger in contact with a front surface of the light guiding plate and light reflected from the finger is~~ transmitted into the light guiding plate and reflected from a rear surface of the light guiding plate

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toward a side end surface of the light guiding plate; ~~light that enters the light guiding plate from a front surface thereof and is directed toward the rear surface;~~

light receiving means on the side end surface of the light guiding plate for receiving the ~~deflected~~ reflected light exiting from the side end surface of the light guiding plate; and

a drive circuit for driving the active matrix liquid crystal cell to pinpoint-irradiate a fingerprint of the finger in contact with the light guiding plate by pinpointing with the light emitted from the illumination source and causing the light receiving means to pinpoint-receive the light reflected by the fingerprint to thereby obtain an image of the fingerprint.

6. (currently amended) A fingerprint reading method comprising the steps of:

providing an active matrix liquid crystal cell;

providing illuminating means for projecting light from a rear surface of the active matrix liquid crystal cell;

providing a flat light guiding plate ~~having parallel-opposed main faces~~ on a front surface of the active matrix liquid crystal cell opposite the rear surface for receiving the light coming from the rear surface and reflecting on a rear surface of the light guiding plate ~~deflecting~~ toward a side end surface of the light guiding plate light that enters the light guiding plate from a front surface thereof and that is directed toward the rear surface;

selectively pinpoint-irradiating a ~~fingerprint~~ finger touching a front surface of the light guiding plate through the active matrix liquid crystal cell with the light projected from the rear surface of the active matrix liquid crystal cell;

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receiving the light reflected from the finger touching the front surface of the light guiding plate toward the rear surface of the light guiding plate by the fingerprint and further reflected from the rear surface of the light guiding plate towards a side surface of the light guiding plate and exiting from the side end surface of the light guiding plate; and

using the received light reflected by the ~~fingerprint~~ finger from the side end surface of the light guiding plate to obtain an image of the a fingerprint of the finger.

27. (~~new~~ currently amended) A fingerprint reading method comprising the steps of:  
providing a liquid crystal cell;  
providing a light guiding plate on a front surface of the liquid crystal cell;  
selectively pinpoint-irradiating a finger touching a front surface of the light guiding plate by projecting light in a first direction serially through the liquid crystal cell and the light guiding plate;

using the light guiding plate to guide light reflected by the finger touching the front surface of the light guiding plate toward a rear surface of the light guiding plate in a second direction generally transverse to the first direction by and further reflecting the reflected light from a rear surface of the light guiding plate toward a side end surface thereof; and

using the reflected light exiting from the side end surface of the light guiding plate to obtain an image of a fingerprint of the finger.

### **REASONS FOR ALLOWANCE**

2. The following is an examiner's statement of reasons for allowance: the instant invention replaces the known fingerprint reader using an active matrix liquid crystal cell and a light guiding plate. The essential difference from the prior art is that the light guiding plate of the instant invention functions to transmit the light emitted from an illumination device toward the front surface of the light guiding plate and guides the light reflected by a finger to the rear surface of the light guiding plate and further reflects the light to a side end of the light guiding plate where it is received by the light receiving device to obtain an image of a fingerprint. These features in combination with the other elements of the claims are not disclosed or suggested by the prior art of record.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Contact Information***

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Virginia M Kibler whose telephone number is (703) 306-4072. The examiner can normally be reached on Mon-Thurs 8:00 - 5:30 and every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Virginia Kibler can be reached on (703) 306-4072. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Virginia Kibler  
01/05/05

**MEHRDAD DASTOURI**  
**PRIMARY EXAMINER**

